

DESCRIPTIONS OF NEW CURCULIONID BEETLES OF THE TRIBE ANTHONOMINI.

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In the search for available parasites to use in the fight against the boll weevil (*Anthonomus grandis*), numerous new species have been found and records of hitherto unknown breeding habits made. A few interesting species contained in the U. S. National Museum are here described, either because they were collected in Texas or because of records accompanying them. This paper is published by consent of the officials of the Bureau of Entomology. The immature stages of the bred species will be described later.

MACRORHOPTUS SPHAERALCIAE, new species.

Numerous specimens were bred from the fruit capsules of *Sphocleia angustifolia* from material collected May 4, 1907, at Devils River, Texas, by F. C. Bishopp.

Length 1.25 to 1.75 mm. Oblong, black, with elytra, legs, antennae and tip of beak, ferruginous. Densely clothed with elongate pale scales, which are somewhat concave, and are mixed with inclining clavate bristles. Vestiture of prothorax densest at posterior angles. This species is readily separated from either of the described species by its light color (when unrubbed), its small size, and the inclining bristles.

Type.—Cat. No. 10051, U.S.N.M.

SMICRAULAX, new genus.

Claws toothed; middle coxae separated by mesosternum; posterior tibiae mucronate; scrobes short, almost reaching eyes, directed beneath eyes; elytra quadri-tuberculate at base. The genus belongs near *Cionistes*.

Name derived from $\sigma\mu\kappa\rho\acute{o}\varsigma$, signifying short, and $\alpha\tilde{\nu}\lambda\alpha\tilde{\xi}$, signifying furrow, referring to the short scrobe.

Type of genus.—*Smicraulax tuberculatus*.

SMICRAULAX TUBERCULATUS, new species.

Described from one specimen in the Hubbard and Schwarz collection from San Diego, Texas, May 3, which is the type of the genus.

Length 2 mm. Elongate oblong, black, with beak, apical margin of prothorax, posthumeral spots, apex of elytra, antennae, trochanters, base and apex of femora, the tibiae and tarsi reddish or rufo-piceous; vestiture composed of white squamiform bristles, mainly placed one to a puncture above, very sparse, with condensed patches on scutellum and a subbasal line on elytra, and on side of mesothorax and metathorax below, abdomen very sparsely pubescent with minute hairs, legs sparsely pubescent with elongate scales.

Beak short, very stout, not longer than prothorax, dorsally flattened, compressed about middle, very shining, minutely and remotely punctured. Scrobes beginning about middle of beak, broad, extending straight, but beneath eyes, and not quite reaching eyes. Scape short, clavate, slightly curved; funicle and club almost as long as beak; funicle seven-jointed, first joint stout, clavate, about twice as long as second, which is a little longer than third, joints three to seven transverse, becoming broader toward club; club elongate, pubescent. Eyes large, much closer together than breadth of beak with a shallow depression or fovea between them. Head remotely and finely punctate, concentrically rugose. Prothorax about as long as broad at base, apex and base straight, sides convex, bulging behind middle; apex narrower than base; closely and coarsely punctured. Elytra straight at base, a little wider than thorax, angles slightly rounded, sides parallel, evenly rounded behind to apex, the two elytra rounded together; striately punctate, the striae not greatly impressed except at the sides, punctures large, round but rather shallow; humeri and a rounded tubercle at base of third interspace, prominent. Prosternum laterally oblique, very short in front of coxae; middle coxae widely separated. Femora clavate, all armed with a sharp tooth, that of the first pair being largest; tibiae bisinuate on inner margin, anterior and median unguiculate, posterior mucronate; tarsi long, first joint longest, claws armed with very long teeth. Abdomen flat, very sparsely and minutely punctate; first and second ventral segments united, the suture being almost entirely erased; last three segments subequal, the third slightly the longer; pygidium concealed.

The type specimen was collected by E. A. Schwarz on black persimmon.

Type.—Cat. No. 10060, U.S.N.M.

ANTHONOMUS (TRICHOBAROPSIS) TEXANUS Dietz.

One specimen was bred from buds of *Sphaeralcea angustifolia*, May 16, 1907, from material collected at Devil's River, Texas, May 4, 1907, by F. C. Bishopp.

This specimen answers the description of *A. texanus* perfectly, but differs from two specimens labeled in manuscript *A. pilosus*, in the handwriting of Dr. Eugène Dugès, of Guanajuato, Mexico, in the following minor characters: The Mexican specimens are 4.5 mm. long and the Texas is 3.25 mm. in length. The ground color of the Mexican specimens is black and of the Texan rufo-piceous. In the Mexican the first funicular joint is longer than the two following and in the Texan it is equal to the two following.

ANTHONOMUS PALLIDUS Dietz.

Anthonomus signatus SAY var. *pallidus* DIETZ.^a

Numerous specimens were bred between May 9 and 13 from crataegus buds collected March 27, 1907, at Shreveport, Louisiana, by R. A. Cushman and W. D. Pierce.

These are quite distinct from the *Anthonomus signatus* bred from rubus buds collected in the same vicinity.

Head and beak black, tip of beak reddish, antennae yellowish with club dark. Prothorax, elytra, legs, and abdomen light yellowish-brown. Thorax ventrally darker. Dark denuded spots on elytra, as in *A. signatus*. Vestiture white, sparse above, except around denuded spots on elytra, and on scutellum, where it is very compact. Body beneath more densely clothed with white squamiform pubescence. The difference in thoracic structure as mentioned by Dietz is constant.

ANTHONOMUS HICORIAE, new species.

A large number of specimens were collected on hickory trees at Texarkana, Texas, March 26, 1907, by R. A. Cushman and W. D. Pierce.

This species belongs in the *suturalis* group near *flavicornis*.

Length 2.7 mm. Black. Sparsely pubescent above, more closely pubescent beneath. Pubescence above and on abdomen beneath bristle form, on sides of thorax mixed with elongate scales, thorax beneath clad entirely with elongate scales. Beak not very slender, opaque, roughly striate punctured. Antennae testaceous; second joint of funicle not much longer than third; club dusky. Head convex, finely and remotely punctured, concentrically rugulose, frontal puncture not very deep. Prothorax a little wider than long, posterior angles straight, slightly constricted at apex, strongly transversely impressed in front; sides parallel at base, rounding in front; surface very coarsely and closely punctured, punctures confluent at sides and in front, with a slight indication of minute dots over

^a Trans. Am. Ent. Soc., XVIII, p. 215.

entire surface. Elytra one-fourth wider at base than prothorax, and two-thirds longer than wide; humeri rounded, sides nearly straight, separately, but not greatly so, rounded at apex; striae impressed; punctures elongate, approximate; interspaces shining, flat at base concave on remainder of disc and at sides, not rugose; scutellum densely white pubescent. Anterior and middle tibiae bisinuate internally, posterior straight; femora and tibiae rufo-piceous, tarsi testaceous.

This species differs from *subguttatus*, which also has the thorax very minutely dotted, by the coarser punctuation, which is more or less confused; it differs from *flavicornis* and *subguttatus* by the coarser punctuation of the beak, and from the former by the not elongate second funicular joint. There are several distinct species in this group, but which should not be defined until the host plant is limited.

Type.—Cat. No. 10054, U.S.N.M.

ANTHONOMUS CALLIRRHÖAE, new species.

Numerous individuals were bred from young buds of *Callirrhoe involucrata* at Victoria and Dallas, Texas, in April, 1907, by J. D. Mitchell and W. D. Pierce.

This species belongs in the *squamosus* group near *ochreopilosus*.

Length 2 mm. Oval, black, upper and under surface densely clothed with truncate-clavate white or brown scales. Beak black, evenly curved, slightly widened at apex, surface shining, finely punctate, each puncture bearing a small scale, the scales becoming very minute toward the apex; mandibles testaceous. Antennae very light ochreous; second joint of funicle longer than third. Eyes somewhat convex, less widely separated above than the base of the beak. Head punctured and densely pubescent, frontal fovea elongate. Prothorax about one-third wider than long strongly narrowed anteriorly, apex not constricted, base bisinuate, sides rounded; surface densely and deeply punctured. Elytra oval, rufo-piceous, about one-fourth wider than prothorax at base; humeri rounded, sides gradually rounded to apex; striate and punctured, punctures concealed by scales; interspaces wide, convex shining. Color pattern mottled above, entirely white beneath; prothorax with brown vittae on each side of middle and on sides; scutellum white; elytra clad with brown scales with a white intrahumeral spot, a long lateral line at middle of elytra, and two transverse medially interrupted fasciae and a small lateral white spot between these. Legs light ochreous, pubescent; femora clavate, anterior armed with a small, acute tooth; tibiae stout almost straight; last tarsal joint elongate. The posterior tibiae are distinctly unguiculate but the species can not be separated from *Anthonomus* for that reason.

Type.—Cat. No. 10053, U.S.N.M.

Specimens less plainly marked were collected at Victoria, Texas, June 10, 14, 1903, May 29, 1905, April 17, 1907, by W. E. Hinds. Four gray colored specimens with a like colored pattern were taken April 8, 1907, at San Antonio, Texas, by F. C. Pratt.

ANTHONOMUS HETEROTHECAE, new species.

Bred in large numbers from heads of *Heterotheca subaxillaris* at Jacksonville, Texas, October 11, 1905, Tyler, Texas, Palestine, Texas.

This species belongs in the *squamosus* group near *tectus*.

Length 2.2 mm. Oval, pitchy brown, densely clothed with truncate or ovate white and brownish scales. Beak curved, punctato-striolate, shining at apex; median carina and striae distinct; pubescent at base. Antennae rufotestaceous, club dusky; first joint of funicle elongate, second less distinctly so. Eyes feebly convex, closer together than width of beak at base. Head scaly, frontal fovea hardly evident. Prothorax one-half wider than long, narrowed from base to apex, latter not constricted, sides feebly rounded; base feebly bisinuate; surface densely and rather coarsely punctate, punctures not completely concealed by the scales, which are white along the median line and on the sides forming three narrow vittae; scutel densely pubescent with white scales. Elytra very little wider than prothorax at base, humeri sloping; rufotestaceous, clothed mainly with brownish scales, with white scales on the suture, a white vitta on the fourth interspace almost from the base, on the sixth interspace from base for a short distance, and an indistinct white spot at sides near middle on eighth to last interspaces; striae impressed, punctures obscured by scales; interspaces flat. Legs rufotestaceous, pubescent, anterior femora armed with distinct tooth, middle and posterior very indistinctly toothed.

This species has been called *Anthonomus disjunctus* by myself in previous papers, from which it is quite distinct.

Type.—Cat. No. 10052, U.S.N.M.

ANTHONOMUS SUBFASCIATUS Le Conte.

Two specimens of this species were collected on cornus flowers at Dallas, Texas, April 24, 1907.

ANTHONOMUS (CNEMOCYLLUS) APHANOSTEPHI, new species.

Large quantities of this species were bred from the heads of *Aphanostephus skirrobasis* collected at Calvert, Texas, in May, and from the heads of a blue aster collected at Dallas, in June. One specimen also was collected by F. C. Pratt May 10, 1906, at San Antonio, Texas.

This species belongs, among those with six-jointed antennae, in the subgenus *Cnemocyllus*, the light forms belonging near *canus* and the dark forms near *ligatus*. The great variation displayed by individuals bred from the same material issues a warning against using color pattern in a table for separation of species.

Length 1.5 to 2.2 mm. Elliptic, pitchy brown, very densely clothed with large scales, which on the elytra and thorax beneath are round, on the prothorax above a little longer, and on the abdomen ovate. They are greatly condensed on the sides. The scales form a more or less distinct pattern; on the thorax the median line is light with broad dark bands on each side of it, with light lateral vittae, larger sublateral vittae, and a lighter underside; scutel light; basal margin of elytra, basal quarter and apical half of first interspace, second and last quarters of third interspace, third eighth of fourth interspace, basal three-eighths of fifth interspace, third eighth of sixth interspace, last three interspaces and greater part of apex, light. Head with an impressed frontal line extending upon the base of the rostrum. Beak about three-fourths longer than prothorax. Prothorax over one-third wider than long, sides almost parallel in basal half, strongly narrowed and distinctly, though not suddenly, constricted at apex. Elytra wider at base than prothorax, slightly rounded on sides, subparallel, gradually rounded to apex behind; striae prominent, but punctures concealed by scales. Anterior femora armed with a sharp distinct tooth; posterior tibiae of male regularly curved.

The colors are quite variable and may be given in combinations as found in the typical material: (1) Purplish red with lemon yellow and brown; (2) dark brown and purple with creamy yellow; (3) greenish black and purple with creamy yellow and pink; (4) greenish black, purple and brown with creamy yellow and pink; (5) purple and brown with greenish white; (6) dark brown with light brown and creamy yellow; (7) light brown and pale yellow; (8) pale brown and creamy yellow; (9) pale brown and bright white; (10) pale purple and bright white; (11) pale purple and pale brown with bright white.

Type.—Cat. No. 10055, U.S.N.M.

ANTHONOMUS (CNEMOCYLLUS) BACCHARIDIS, new species.

Several specimens taken on *Baccharis* species in Madera Canyon, Santa Rita Mountains, Arizona, May 26, from the Hubbard and Schwarz collection.

This species belongs near *aphanostephi*, but differs by having the beak only about two-sevenths longer than the prothorax, the prothorax not more than one-third wider than long, and by the scales being less densely placed and condensed along the median line and on

the sides of thorax and elytra. The scales are large, oval, and cream or pinkish colored. The posterior tibiae of the female are slightly concave, and of the male are very strongly curved. The color pattern is as in *aphanostephi*.

Type.—Cat. No. 10057, U.S.N.M.

ANTHONOMUS (CNEMOCYLLUS) LIGATUS Dietz.

Breeds in the stems of *Leucosyris spinosus* forming gall-like swellings. Numerous specimens were bred between May 11 and 21 from galls collected May 8, 1907, at Del Rio, Texas, by E. A. Schwarz, F. C. Pratt, and F. C. Bishopp.

This species varies considerably in size and color; in some the color is very dark and the vittae are indistinct, while in others the color is so light that the dark pattern disappears.

MECYNOPYGA, new genus.

The abdominal structure of this genus separates it from all other Anthonomines. Claws toothed, middle coxae separated by mesosternum; scrobes long, directed beneath the eye; funicle six-jointed. Prosternum long in front of the coxae; pygidium elongate, almost horizontal, transversely depressed. The genus belongs near Pseudanthonomus in the Dietz tables.

Name derived from *μηκύνω* (to elongate) + *πῶγι* (hind end).

Type of the genus.—*Mecynopyga texana*.

MECYNOPYGA TEXANA, new species.

One specimen collected by E. A. Schwarz at San Diego, Texas, May 5.

Length 1.7 mm. Elongate, elliptical, black; beak, antennae, and legs rufo-piceous. Densely clad with oval to elongate truncate, capitate scales, which on the elytra occur only on the interspaces and alternate with linear scales on the striae; scales below white, except on apical half of abdomen, which is clad with rich ochereous brown scales; above, the predominant color is ochereous brown, with white on head, a broad white fascia on each side of the middle on the prothorax, becoming obsolete before apex, a small white post-scutellar spot, a longitudinal white fascia from humeri to middle of elytra, thence transverse, a white sutural line beginning on the transverse band and extending to the apex and a short distance on the apical margin.

Beak about as long as head and thorax, slightly tapering toward apex, shining, finely punctate, striolate, pubescent at base. Scrobes long, directed beneath the eye; scape clavate; funicle six-jointed, first and second joints elongate, second longer than first, following

joints shorter, but longer than broad, each clad with a whorl of elongate linear scales; club oval, pubescent, very compact. Head very minutely punctate, concentrically rugulose. Prothorax slightly longer than wide, sides converging from base to apex, very feebly convex; apex straight, base very slightly convexly angled, slightly notched in front of scutellum. Elytra one-half wider at base than thorax, humeri rounded, sides straight, a little more than one-half longer than wide, individually rounded at apex, striae and interspaces indicated by difference in scales, striae not greatly impressed. Pygidium greatly exposed, elongate, subtruncate at apex, horizontal, transversely impressed.

Thorax beneath long in front of coxae; middle coxae moderately separated. First abdominal rather short behind coxae, but long at sides; second elongate; third short; fourth presumably short, but so closely united to fifth that the suture has almost disappeared; fourth and fifth almost as long as three preceding, transversely impressed opposite impression of pygidium, the apices of pygidium and venter thus greatly diverging.

Type.—Cat. No. 10059, U.S.N.M.

PSEUDANTHONOMUS CRATAEGI Walsh.

This species was found very abundant in crataegus trees at Natchitoches and Shreveport, Louisiana, March 27 and 28, 1907, by R. A. Cushman and W. D. Pierce.

PSEUDANTHONOMUS HAMAMELIDIS, new species.

One specimen bred August 30, 1907, from witch hazel fruit collected at Afton, Virginia, by F. W. Foster (Hopkins, No. 6329).

Several specimens bred August 25, 1894, from *Hamamelis virginiana* Linnaeus, Lake George, New York, J. L. Zabriskie, collector.

This species is of about the same size and general appearance as *crataegi* and *validus*, but differs from both by having the prothorax less constricted at apex, by its coarse, long, evenly distributed and denser yellowish pubescence, and by its rather lighter color.

Length 2 mm. Oblong-oval, rufo-testaceous, rather closely clothed with long yellowish pubescence. Scrobes oblique, scarcely directed against lower margin of eyes. Prothorax not much wider than long, rounded to apex, slightly constricted before apex; strongly, densely, and deeply punctured; pubescence very slightly condensed on median line at base. Elytra one-third wider at base than prothorax; striae deeply impressed, punctures large and distinct; interspaces convex, shining, equal in width except at base where the third and fifth are longer, the intervening striae being confluent; the seventh, eighth, and ninth interspaces are confluent to form the humeri.

Type.—Cat. No. 10058, U.S.N.M.

PSEUDANTHONOMUS KRAMERIAE, new species.

Numerous specimens were bred from the buds of *Krameria secundiflora* taken at Dallas, Texas, May 15, 1907, College Station, Texas, May 16.

This species belongs close to *validus* and *hamamelidis*, having the pubescence arranged densely as in the latter. It is considerably smaller however.

Length 1.5 mm. Prothorax wider than long. Differs mainly from *hamamelidis* by having the sixth to tenth elytral interspaces form the humeri, by the very prominently raised third interspace. The humeri are more densely pubescent, the elytral striae are less impressed. The two species are very similar, but the radical difference in breeding habit shows them to be greatly removed.

The pupæ will probably show greater differences and those of *hamamelidis* are therefore greatly desired for comparison with *krameriae*.

Type.—Cat. No. 10056, U.S.N.M.

ANTHONOMOPSIS MIXTUS Le Conte.

This species was found very abundant on plum trees at Texarkana, Texas, March 26, 1907, by R. A. Cushman and W. D. Pierce.